

**Date:** March 6, 2017  
**To:** Federal Communications Commission  
**From:** Ronald M. Powell, Ph.D.  
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**Subject: OPPOSE WT Docket No. 16-421**  
Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting

## **I OPPOSE WT Docket No. 16-421 and 5G on Health and Other Grounds. They are Massive Federal Overreach.**

### ***Background of Ronald M. Powell, Ph.D.***

*I am a retired U.S. Government career scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career, I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology. For those organizations, respectively, I addressed Federal research and development program evaluation, energy policy research, and measurement development in support of the electronics and electrical-equipment industries and the biomedical research community. I currently interact with other scientists and with physicians around the world on the impact of electromagnetic fields on human health.*

## **Why Oppose WT Docket No. 16-421 and 5G?**

### **The National Toxicology Program at NIH has linked cellular radiation to cancer.**

The National Toxicology Program (NTP) at the National Institutes of Health (NIH) published in 2016 the “Partial Findings” of a \$25 million multi-year study of the impact of cell phone radiation on health. The NTP study found a likely causal relationship between the radiofrequency radiation emitted by cell phones and the occurrence of malignant brain cancer (glioma) and malignant nerve tumors (schwannomas) of the heart in male rats.

Description of the NTP study: <http://ntp.niehs.nih.gov/results/areas/cellphones/index.html>

Published “Partial Findings” of the NTP study: <http://biorxiv.org/content/early/2016/06/23/055699>

Informative Discussion of the NTP study: <http://ehtrust.org/science/facts-national-toxicology-program-cellphone-rat-cancer-study>

The NTP regarded its findings as so important to world health that it issued the “Partial Findings” as soon as it could (May 2016) and formally presented those findings at an international conference (BioEM2016, June 2016) attended by 300 scientists from 41 countries.

<http://www.alphagalileo.org/ViewItem.aspx?ItemId=164837&CultureCode=en>

## **The International Agency for Research on Cancer at WHO has classified radiofrequency radiation as a possible human carcinogen.**

The NTP study reinforces the cancer classification of radiofrequency radiation made in 2011, by the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO). Such radiation, including specifically radiation from cell phones, was classified as a Group 2B carcinogen (possible carcinogen for humans) because of the associated occurrence of brain cancer (glioma) and acoustic neuroma (a benign tumor of the auditory nerve) which is a form of schwannoma.

[http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)

In fact, the findings of the NTP study, in combination with the findings of other studies conducted since 2011, have greatly increased the likelihood that the IARC will raise its classification of radiofrequency radiation to Group 2A (probable carcinogen for humans) or even to Group 1 (known carcinogen for humans) in the near future.

## **The world's scientists have appealed to the United Nations and the World Health Organization to warn the world population about the harm to health caused by radiofrequency radiation from wireless devices.**

As of January 29, 2017, 224 scientists from 41 nations have signed an international appeal first submitted to the United Nations and to the World Health Organization in May 2015. These scientists seek improved protection of the public from harm from the radiation produced by many wireless sources, including "cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors" among others. Together, these scientists have published over 2000 peer-reviewed research papers on this subject.

<https://www.emfscientist.org/index.php/emf-scientist-appeal>

## **The most detailed and comprehensive analyses of international biomedical research show a broad variety of adverse health effects from exposure to radiofrequency radiation.**

The health risks posed by continued expansion of the use of radiofrequency radiation in wireless devices are not limited to cancer, as devastating as that consequence is. The much broader range of health effects was reviewed in immense detail in the BioInitiative Report of 2012. This 1479-page review considered about 1800 biomedical research publications, most issued in the previous five years. The BioInitiative 2012 Report was prepared by an international body of 29 experts, heavy in Ph.D.s and M.D.s, from 10 countries, including the USA which contributed the most experts (10). The review concludes that "The continued rollout of wireless technologies and devices puts global public health at risk from unrestricted wireless commerce unless new, and far lower exposure limits and strong precautionary warnings for their use are implemented."

BioInitiative Working Group, Cindy Sage, M.A. and David O. Carpenter, M.D., Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012 (<http://www.bioinitiative.org>).

## **WT Docket No. 16-421 is a classic example of massive Federal overreach, supposedly opposed by the newly elected Administration.**

WT Docket No. 16-421 would surpass even the offensive 1996 Telecommunications Act by overriding even more thoroughly the power of state and local governments and municipalities to bar the installation of wireless technology on environmental/health grounds. This Act, amplified by WT Docket No. 16-421, may be the greatest offense to local rule of all time.

## **Why are WT Docket No. 16-421 and 5G so especially outrageous to the public?**

- They would greatly extend FCC's current policy of the MANDATORY IRRADIATION OF THE PUBLIC without adequate prior study of the potential health impact and assurance of safety.
- They would IRRADIATE EVERYONE, including the most vulnerable to harm from radiofrequency radiation: pregnant women, unborn children, young children, teenagers, men of reproductive age, the elderly, the disabled, and the chronically ill.
- They would likely rely on the FCC's current outdated, excessively permissive, and thus widely criticized, radiation-exposure guidelines that enable many parties to make false claims of safety for wireless products. Those guidelines are based primarily on a 30-year-old analysis by the National Council on Radiation Protection and Measurements (NCRP),<sup>1</sup> produced many years before the emergence of most of the digital wireless technology in use today. And the FCC's proposed move to 5G would offer no further study of safety, even though the new study by the National Toxicology Program at NIH has already found those same FCC guidelines unprotective.
- They would set a goal of irradiating all environments, including the insides of homes, whether single family homes, townhouses, or apartments, ending any remnant of the notion that "your home is your castle" in which you are supposed to be safe and to have a measure of control of your environment. Specifically, the proposed 5G technology would blast through walls and cribs just as the current wireless technologies do. The result would be to drive even more people out of their homes than are already being displaced by the current wireless technologies.
- They would force cell antennas onto residential streets, bringing the radiation threat even more up close and personal to the public.
- They would bypass all current biomedical studies endeavoring to determine if radiofrequency radiation is a factor in the explosive growth of major health conditions -- such as autism, attention deficit hyperactivity disorder (ADHD), and Alzheimer's disease -- that are ruining the lives of so many people, from their youngest years to their oldest years.

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<sup>1</sup> Federal Communications Commission, Office Engineering & Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, page 64 (August 1997). See the last paragraph on the page to find this statement: "The FCC-adopted limits for Maximum Permissible Exposure (MPE) are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814 ([http://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet65/oet65.pdf](http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)).

- They would increase the prospect for the continued explosion of health care costs, with a further worsening of the national debt, and with no clear assignment of responsibility to the providers of the harmful radiation. In short, 5G would continue to export to society the costs of the harm that wireless products cause.
- They would totally ignore the rapidly growing international biomedical research literature that demonstrates that radiofrequency radiation adversely affects human health at levels far below the current FCC exposure guidelines. And the adverse impact on animal, insect, and plant health, too, would continue to be ignored.
- They would continue to dismiss, as too expensive, the tremendous potential of wired technologies (especially fiber optics) to provide higher data rates, greater reliability, greater cyber security, and greater safety for human health, as if those benefits should be excluded from any cost comparisons with wireless technologies.

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